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THE MONIST

THE RELATIONAL ELEMENT IN MONISM.

I.

IN the ever-changing panorama which the world offers to the contemplation of sentient beings, two characters have never failed to arouse the interest of the human mind, to provoke it to the activities of philosophic thought—the manner in which objects are related to each other, and the nature of the objects themselves. Being under necessity of adapting himself to it, man looks to the external world for the materials of an organized intellectual awareness to its twofold aspect of extension, or so-called "space," of succession, or so-called "time." Among the most important of the conditions of this awareness, two may be mentioned—on the one hand man's local position in nature and limited power of movement within it, restricting him to a mere fragment of its vast spatial extent; on the other hand, that serial character of the mind process which, yielding direct glimpses in such narrow area of no more than momentary aspects of the nature there accessible to him, confines him largely to the appearances yielded by objects in the present stage of their cycle of change. The conditions of man's existence thus combine with the limitations of sense to favor incomplete and therefore erroneous views of nature—lead man, that is to say, to treat the local environment with which he is familiar as if it were the whole environment; to regard the present stage of the objects with which he is acquainted as if it constituted all the stages of such objects; in a word, to confound each sense-image with the object which it merely represents, and thus to make the temporary and local aspects of the world around him do duty in his intellectual processes for nature in its totality.

Now the actual mechanism of these limitations—given man's local position in "space"—has always been the sense-image; and as the sense-image restricts us to single objects at a time, as well as to the present aspects of such objects, it makes our power to realize what objects are as wholes in "time" and "space" depend on that supplementary intellectual process by which the mind segregates and unifies all the objective aspects of the environment which sense-images yield. But as this intellectual process, this ordering of the sense-images by the intellect, this totalizing of the fragmentary elements of sense, matures late in the history of the race, the early period of man's acquaintance with nature is one in which he is not only restricted to little more than sense-image knowledge of it, but is compelled to view objects as dynamically isolated from, as out of relation to each other. For as sense-knowledge contains no evidence, apart from the intellectual process, of the way in which objects are intimately and fundamentally related to each other, of how they are connected by action and reaction, it compels the primitive mind to treat each of them as having absolute instead of contingent existence, as possessing in and of itself all the qualities or properties which it manifests, as being self-sourced instead of system-sourced.

There has undoubtedly been advance on this primitive treatment of objects as if they existed independently of each other; considerable progress has even been made towards the realization of their dynamic interrelatedness. For sense-images are merely the materials of nature knowledge; in the earliest stages of its development, the human mind was always at work upon this sense-material, classifying, segregating, unifying it under the stress of an impulsion to self-maintenance that demanded of the organism an increasingly accurate adjustment of itself to environment. Yet it is only in the modern stage that this intellectual process has attained anything like considerable development. Releasing the mind from more or less dependence on the present aspect of an object, it has enabled us to realize the object as constituted of all its aspects—of all the changes through which it passes—and thus to deal with it intellectually as a whole in time; by simultaneously revealing interaction between the individual object and other objects, it has enabled us to recognize that objects are not isolated from each other, but dynamically interrelated and interdetermining.

That the doctrine of "evolution," so called, should have formed the first great step towards the completion of nature knowledge becomes explicable only when regard is had to the fact that the relations earliest revealed to the mind are always those of change. As the "time" aspects of objects are aspects of difference; as it is the procession of an object from one stage of its existence to another and not its continuing existence, which most excites our attention—it was inevitable that when the human mind began to reach out for the deeper and wider acquaintance with objects which is to be gained only from a knowledge of their connection with each other, it should have been overwhelmingly impressed, not with the fact of their relation in "space," but with the phenomena of their relation in "time." And if it be asked why the mind has simultaneously fallen short in the equally necessary process of realizing objects as totalities in their extension aspect, the reply is that the field is here not one of differences that shock the consciousness because they embody change, but of resemblances cognizable by the intellect rather than by the senses—that the deeper extension aspects of existence, being aspects of the fundamental, the universal, the permanent, manifest themselves, not as differences, but as likenesses, and long resisting the solvent of the sense knowledge, yield only to the intellectual process, thus coming late into nature knowledge as one of its most mature and advanced stages. The result of this failure to complete our succession or "evolutionary" knowledge of objects with an equally radical insight into the extension aspect of nature has been, so far as the fundamental method of its thought is concerned, to retain science in a stage which has advanced little beyond that represented by the mind of primitive man. There is undoubted recognition of the fact that objects are interrelated by action, yet the action is viewed independently of the nature of the objects which act. Alike in regard to their motion and nature, objects are regarded, not as contingent, but as absolute existences — not as system-sourced, but as self-sourced—not as constitutively, but as adventitiously related.

II.

Let us now see what this absolute view of objects must signify for nature knowledge, even when pervaded and permeated here and there by glimpses of the larger relational view. Observe first how it diminishes interest in and retards discovery of the relations which exist between the different phases of objects in both "time" and "space." For if an object as extended possess its properties absolutely, no new knowledge of it can be gained by inquiring into the properties of other objects; if, on the other hand, it possess each "time" phase of its existence absolutely, nothing can be gained by inquiring into the nature of the other phases. Whence it follows that, were we to accept the absolute view of objects—the view that they are self-sourced rather than system-sourced—it could only be a waste of effort to seek for the individual being the explanation yielded by the human society, to consider the cell in the light of the community of cells, to study life in general in order to obtain accurate knowledge of some special class of organisms, to rely on the inorganic for the characters of the organic, to resort to the universe for the illumination of the unit. In the view that each object possesses its powers independently of all other objects, the search for cause, which has done so much for the advance of nature knowledge, dwindles to a mere quest after relation between states of consciousness until the organism comes to be regarded as in no way necessarily dependent for such states upon any real, upon any actual universe which can be conceived of as existing outside. We find this uncertainty even in Kant; the very belief of Hume, still lingering in the philosophical aspect of nature study, to the effect that our supposed knowledge of cause is wholly subjective—that what we call causal relation is merely the habitual succession of states of consciousness—is itself due to the inadequate recognition of the relation which exists between organism and environment—failure to view conscious states as necessarily related to objects outside the organism themselves interrelated—failure also to regard objective relations as constitutive instead of merely adventitious.

We may begin our consideration of the retarding effects of the absolute view, here contrasted with the relational view of nature, by noting the almost complete indifference which science has thus far shown towards the problem of the relation of substance—of the world of ether and matter—to so-called "space"; and it has shown this indifference in the supposition that the problem is one of no importance for the practical interests of nature investigation. Meanwhile, it has tacitly accepted the view that "space," as a containing capacity for objects which would remain even were objects annihilated, is a real entity, an existence *sui generis.* Says Tyndall, in his paper on *The Constitution of Nature*:

> "Though compelled to think of space as unbounded, there is no mental necessity appealing to us to think of it either as filled or empty; whether it is so or not must be decided by experiment and observation.... If the ether have a boundary, masses of ponderable matter might be conceived to exist beyond it, but they emit no light.... As far as our knowledge of space extends, we are to conceive of it as the holder of the luminiferous ether through which are interspersed, at enormous distances apart, the ponderous nuclei of the stars."

The result of specialism thus unfounded in the intellectual conditions of nature knowledge has been to delay our realization of the universe as a unity, since the assumption of an entity called "space," which existence merely "occupies," compels us to compromise in our minds between two ideas—the conception of a universe of objects which "fills" space and is therefore unending, and the conception of a cosmic system which, being limited, is bounded in every direction by "universal space." If we accept the former view, the notion of definite characters—definite amounts of power and of the passing over of power into movement—disappears in the thought of indefinite spatial vastness, or is reduced to an *impasse* of contradiction between characters which, though mentally conceivable, are intellectually irreconcilable; if we accept the view of a limited cosmos locally situated in "universal space," we raise the question of the possibility of other systems, and with it that problem of the relation between them which, unless affirmatively resolved, with the result of irreconcilable contradiction, brings the thought of cosmic unity to an end: as the term "universe," implying "oneness," signifies all-inclusive totality, it becomes a misnomer when an attempt is made to utilize it for the pseudo-conception of a plurality of "universes" separated from each other by tracts of unoccupied emptiness. That the thought of an existence vacuum which objects merely "occupy" has otherwise retarded nature knowledge is well seen in the assumption, frequently met with in scientific treatises, that heat may be dissipated from "our universe" into "space," as well as in the historic confusion of "empty space" with the ether system, and in the contradictory assumptions of popular science regarding what are called "the confines of the universe," the "limits of our system," the "material universe," etc.

III.

In now passing from the most general to the more concrete of the nature problems, it will help us if we bear in mind that the absolute view of objects—the view that each exists independently of all the rest, and that the relation between them is adventitious, not constitutive—ignores three principles of the profoundest import for nature study. These principles may be stated as follows:

1. The Principle of Likeness. Objects which, however they may differ in superficial characters, resemble each other in fundamental characters, belong to the same system, and must be interpreted in the same way.

2. The Principle of Derivation. Wherever in local, superficial, transitory aspects of nature we find characters that demand explanation, we are bound to seek that explanation not in other local, superficial, transitory aspects of existence, but in its permanent, fundamental and universal characters.

3. The Principle of Universality. True explanations of nature cannot be isolated explanations, explanations *sui generis,* explanations *ad rem,* but must be explanations which are themselves interrelated. In other words, all great laws which are to formulate or describe nature processes must be laws that are primordially valid for the universal, the fundamental, the permanent characters of the cosmic process, before being derivatively valid for its local, superficial, and transitory characters. The explanatory range of every

true natural law, that is to say, must resemble, to use a homely illustration, the range of a through train which reaches the subsidiary, suburban, outlying stations only because it has begun its trip in the great metropolis.

All three principles assume and demand the thought of the all-inclusive unity of the cosmos. The first, aimed at the failure to realize cosmic unity, preserves us from separating in our thought great classes of phenomena that belong together; the second saves us from the temptation, so strongly held out by sense knowledge and our local position in the universe, to reverse true principles of interpretation by employing the local and immediate for the elucidation of the permanent and the universal; the third emphasizes the orderly filiation of all explanations of nature phenomena by referring such phenomena to their ultimate source in the substance system. Accepting all three, as we are compelled to do, then it follows—from the principle of likeness, that matter and ether, being connected by action and reaction, are of fundamentally the same nature—from the principle of derivation, that we must interpret the mind by the body, and not the body by the mind; the individual by society, and not society by the individual; the cell by the organism, not the organism by the cell; the organic by the inorganic, and not the inorganic by the organic; matter by substance, not substance by matter; the unit by the universe, not the universe by the unit—from the principle of universality, that whatever explanations are reached for vital, for chemical, for electro-magnetic, for gravitative phenomena, must be interrelated explanations, and that the causal determinations which result in organic activity and structure cannot be other than derivative forms of the causal determinations out of which inorganic activities and structures arise.

Now all these principles are more or less negatived or ignored in the absolute attitude towards nature—in the tacit acceptance by our so-called "scientific method" of the view that objects, possessing their characters absolutely, are related to each other not constitutively, but only adventitiously—in views, that is to say, which really go together, for if an object be self-sourced, then any relation between it and other objects must be adventitious, while if the object be system-sourced, then any relation between it and other objects must be constitutive. Taking our first example from the most important of the concrete nature problems, we may easily recognize that, by ignoring the principle of likeness, the physicist need not assume that there is any relation other than an adventitious one between matter and ether; while, by denying the principle of derivation, he may even seek to explain ether from matter—the universal from the merely local element, with the result of one or other of the familiar comparisons in which physicists liken ether to jelly, wax, or steel. Well-nigh all the difficulties thus far met with by the human mind in trying to realize the nature of ether have been difficulties resulting from the effort to approximate it to the nature of matter. Le Sage used material corpuscles to elucidate gravitative action; Newton's theory of light had an analogous basis in matter; heat was long traced to material elements which could be mingled with and obtained from the molecules of objects; the early "fluid" hypothesis of electricity anticipated, in its material character, certain modern methods of accounting for the luminous manifestations of electro-magnetic phenomena; it is still, in our own time found possible to formulate hypotheses for ether which contradict those held for matter, as in the case of the so-called "vortex-atom" theory, which asserts the possibility of "frictionless" or unresisted motion.

The absolute view of objects as existing independently of the system of objects carries with it the belief that the motion of an object is similarly independent. Even in modern times it has seemed unnecessary to set up any indispensable relation between motion and resistance to motion, whence physicists are able to propound hypotheses regarding matter which accept or reject at will the notion that movement is possible in an existence vacuum. Nor does the ability of the mind to do this depend altogether on the survival of the old thought of the ether system as a vast emptiness whose only function is to allow itself to be occupied by objects. If the object be itself absolute—related only adventitiously and not constitutively to other objects—then its motion must in like manner be absolute, and we may conceive of it as being utterly indifferent to the presence or absence of resistance—may conceive of it, that is to say, as motion against resistance, or as motion without resistance, according to the assumed circumstances. The important question whether the resistance is constitutively bound up with the motion as an essential and therefore indispensable element thereof, thus turns on the question whether the object which moves exists absolutely, or only by virtue of some relation which connects it with the system of objects. If, moreover, each unit object be regarded as possessing its nature as such absolutely, instead of contingently upon the system; and if motion be also viewed absolutely, as a character not constitutively related either to the nature of the object or to the nature of the system; then physicists are compelled to resort to one of two hypotheses—either to regard motion as an original, underived property of matter, possessed by each unit object, or to treat it as divinely originated at some period in the early history of the cosmos. The latter view is now widely rejected as anthropomorphic; as to the former, it will suffice to say that, besides being a negation of inertia, it is an effort to set up for unit objects in the "celestial spaces," characters which are denied by our experience of such objects on the surface of the earth. The law of likeness requires us to recognize the fundamental oneness of all the forms of power, yet physicists have thus far failed to unify the power which an object puts forth as moving with the power which the same object possesses and exerts by virtue of its nature as related to all other objects. Meanwhile the principle of derivation has been ignored in the effort to make all power kinetic by deducing it from motion instead of from substance.

IV.

This question of the relation of motion to the resistance which it encounters is always met with whenever we come to discuss such problems as the origin of motion, the direction of motion, the conservation of energy, inertia, and cause. As it is of the utmost importance for us to reach relational rather than absolute solutions of such problems, we shall lose nothing by re-emphasizing, in a special form for each, the constitutive relation whereby motion and resistance inter-condition and inter-involve each other. Note first the difference between the absolute and the relative view of the origin of motion; in the absolute view motion is adventitiously acquired from the system, and is under no necessity of returning its energy to the system, whereas in the relational view the energy of motion, being from the system, must be returned to it. Our modern account, again, of motion as taking place along, or as following, the line of least resistance, cannot be regarded as other than overwhelmingly absolute. By distinguishing with such definiteness between the initial stress which results in motion and the resistance which the moving object encounters, it makes the so-called "resistance" adventitious merely—something which, so to speak, motion finds it has to deal with after it has once been set up. To say that motion follows the line of least resistance is to assume that the "least resistance" is something superadded to a process which already exists *de toutes pièces,* is therefore complete independently of whether there is resistance or none—in advance, that is to say, of any experience of resistance by the moving object. The absolute view regards motion as a character *sui generis*—as something which must happen whether it be "resisted" or not—as a change which, while it frequently takes place through a resisting medium, may also take place through an existence-vacuum—as something which is resisted not because "resistance" is any necessary, indispensable part of the motion process, but only because, under certain conditions, "resistance" happens to be present. The absolute view thus relates the "line of least resistance" adventitiously to the stress producing motion; the relational view relates it constitutively to that stress, and does this by showing that resistance, re-stress, or re-action is an essential condition of the stress which produces motion, and therefore an indispensable element of the motion process. The intellectual conditions of the problem, moreover, do not permit of an absolute view of motion, since were it possible for bodies to move through "empty space," the motion of such objects, being unresisted, would require no stress to initiate it, and we should be compelled to conceive of them as indifferently at rest or in motion—as lacking definiteness of condition.

An inevitable result of the view which regards the unit object as possessing its properties absolutely, which disconnects the power of motion from the power of substance, and finds no constitutive necessity for a relation between matter and ether, is the absolute attitude of modern physics towards the method of the so-called "conservation of energy." The term "conservation" is itself objectionable, since it makes half the process do duty for the whole process. Not only must energy be expended in order to be conserved—there is no energy in any form save to the extent that "expenditure" and "conservation" take place simultaneously. Power, in a word, whether it be the power of objects or of the motion of objects, can exist only in the degree of a conserving process which involves expenditure, and of an expending process which involves conservation. To speak of a "conservation" of energy, moreover, is to suggest that, were the conditions unfavorable, energy might fail to be "conserved," might pass out of existence—in which supposition there is at once the error of implying that energy is complete before it is conserved, and the error of denying that presence of a conserving process which is the indispensable condition of expenditure. Note also that the absolute view provides two methods of conservation instead of one—methods wholly irreconcilable with each other—the distribution of the stress into the resistance, when there is resistance; and the continuance of the motion when there is "no resistance." It thus treats "expenditure" and "conservation" as separate processes either of which might theoretically exist without the other; it therefore regards the relation between them as adventitious. In the relational view they are constitutively related, since they reciprocally interinvolve each other as aspects of the two-sided unity which we call Power.

Observe now some of the results which the absolute attitude towards "conservation" makes inevitable. If "conservation of energy" is a character possessed absolutely, not contingently, by matter, then it is useless to seek the explanation of it in any process outside the realm of matter. If, again, the power with which an object moves is something *sui generis*—not related either to the nature of the object or to the power of substance—it is equally useless to seek for any relation between the "conservation" of the energy of motion and the "conservation" of mass (the so-called indestructibility of matter). And if, finally, the conservation of the organism is in like manner something absolute, instead of contingent, there need be no inquiry as to its origin in earlier and more universal forms of conservation. It is, in fact, by failing to relate to each other the various forms of conservation—conservation of ether, conservation of motion, conservation of the organism—that science ignores the principles of likeness, derivation, and universality, and therefore abandons all hope of the solutions to which the application of these principles inevitably lead.

Here we reach the conception of inertia, which is similarly open to an absolute and a relational interpretation. Bodies are said to "persist" in their condition of rest or motion until that condition is changed by power other than their own—to go on moving in a straight line until they meet with resistance or are made to change their condition by force. All such propositions are characteristically absolute: they warn us of the possibility of resistance (reaction), but say nothing of its necessity. They assume that the moving object, with a convenient existence-vacuum for its "medium," may go on moving for ever; yet they fail to show how motion is possible to an object which the proposition has disconnected from the universe. In the absolute view, lingering everywhere in modern physics, the object is held to possess its condition of rest or of movement independently of its relation to the system, or at any rate, as a result of adventitious, rather than constitutive relation to the system; the continuous motion of an object is therefore attributed to absence of resistance, instead of to continuity of differential stress, while the continuous rest of an object is held to be due to absence of differential stress, instead of to continuity of equalized stress. All of which is opposed to the relational view, which holds that when an object remains at rest, it is held at rest by the system —that when it remains or continues in motion, it is kept in motion by the system. For inertia, instead of being a condition adventitiously acquired from the system, is a condition constitutively imposed by the system.

V.

The neglect to recognize constitutive relation is also seen in our modern attitude towards the organism, which has long been viewed absolutely—viewed rather as imposed upon nature, with powers possessed independently of nature, than as arising out of nature with such powers contingently originated. Hence the effort to explain the organism from the cell rather than the cell from the organism — an effort obviously founded on the belief, however tacitly held, that the cells are not constitutively, but only adventitiously related. This attitude is manifest in the perpetual striving of biological experts to find in some detail of cell structure the "secret of life"; in the belief, which confounds the concomitants of phenomena with their causes, that life is to be traced to some electrical, fermentive or other local process in the organism. We are here reminded of the slow advance which has been made towards relational views since the time when the organs of body and mind were treated by physicians as if each existed and possessed its powers more or less independently of the rest—when specialists expert in one field of human pathology were not expected to know anything of the other fields—when sociology, essentially a science of human relations, was not yet born, and it was the custom to regard the characters of the human being as individually intelligible, instead of as being explicable only in the light of the society of individuals. As early hypotheses regarding man left out of consideration the world of the lower organic life, in the supposition that man was self-sourced, instead of system-sourced, so theorists in the realm of human society took that absolute view of the individual human being out of which the exaggerated individualism of the eighteenth and nineteenth centuries had its birth. Even to-day our science of sociology still treats the human individual as related more or less adventitiously instead of constitutively to the sum of individuals, the biological idea, itself absolute, of a system of co-operating units, each complete in itself, having been incorporated almost bodily into the scientific conception of the social system.

Note also how the absolute view has retarded our knowledge of the process of organic development. In the theory of "natural selection" we have an explanation contrived for organisms which has no application to anorgana—a law which, being *ad rem,* describes no part of that higher, that more universal process in which organic development must have originated. And it is because of this isolation of the special theory from any more general theory that we have been compelled to ignore the problem of the manner in which variations arise in the attention which we give to the manner in which they are accumulated—to believe, in a word, that we can solve the problem of the "origin of species" without having first solved the problem of the origin of life. Instead of seeking in the world of the inorganic for some fundamental process of which the superficial organic process is merely a highly special and derivative form, we have been trying to explain the organism by dealing with it alone—by treating it as an object *sui generis,* as an object totally unrelated, or related only adventitiously, to the general system of objects which we call nature.

It is also in the very temper of the absolute view that we have dealt with the problem of intelligence. The principle of derivation requires us to explain the conscious from the unconscious forms of intelligence, yet we have never succeeded in ridding ourselves of the notion that some form of conscious intelligence, if not our own, is at work in the countless adaptations of structure and process which we find within the bodies of plants and animals. In like manner, the principle of derivation requires us to refer the general intelligence of the organism, conscious as well as unconscious, to that larger world in which it must have had its origin; yet instead of tracing organic intelligence to the inorganic cosmos, where the fundamental characters of that intelligence are plainly manifest, we try to read into the universe the most local, the most special, the most transitory forms of intelligent activity—those associated with the consciousness of the human organism. For scientific purposes, that is to say, we seek to explain the intelligence of the organism by making the atoms of matter intelligent; for general purposes, we try to understand nature by referring its intelligent adaptations to a divine intelligence patterned after the intelligence of man.

VI.

The contrast thus shown between absolute and relational views may be traced, with simultaneous disclosure of the source of inaccuracy in the former, through every department of human knowledge. Everywhere the absolute method is the method of ignoring the dependence of the individual object, the single process, on the sum of processes, the system of objects; the relational view is everywhere the method of viewing objects and processes in the light of the totality of processes and objects. Advance in nature knowledge, however darkened and disguised by imperfect method, has ever been advance from absolute to relational ways of viewing nature; it has always meant progress from the thought of the object as self-sourced to the thought of it as system-sourced; it has never been anything other than the progressive mastery, by recognition of fundamental likeness, of those relations of stress and re-stress, of action and re-action, which make up the total system of power which we call universe. Nor is the contrast between absolute and relational merely a character of mental processes: it has its foundation and source in the world of objects. The whole of so-called development, alike in inorganic and organic, is nothing other than a gradual setting up of relation between units and groups—a growing dependence of each unit on the sum of units,—a gradual increase of the contribution made by unit to group, by group to unit—a progressive subordination of unit to system—an advancing domination of unit by system. The formation of matter groups by the gravitational and chemical processes is simply the earlier form of the process which manifests itself on a larger scale in the phenomena of crystallization, and on its most complex scale in the organism and in human society. In all the movements with which sociology deals—movements industrial, political, philanthropic, religious—life shows itself as a moving away from conditions that are absolute towards conditions that are relational. As all failures of nature knowledge have been failures of the absolute view, so all failures in conduct, individual and national, have resulted from an inadequate sense of relation — from the effort to substitute for system-sourced conduct the conduct which is sourced in self. Movement away from the view of the individual and the group as self-dependent towards the view of both as contingent upon and dominated by the system—this is the process which has been at the heart of all moral advance.

It is now proposed to rationalize, and therefore to universalize the procedure which has thus far been followed in the investigation of nature—to make application to the cosmos as a whole the method which has hitherto been applied only locally and fragmentarily, and has thus been applied with inadequate realization of its universal meaning and scope. In the relational view, the solution of nature problems yet unsolved is nothing other than a process of reaching out from the individual object, the individual process, to the system which is to elucidate both—a passing from the local and superficial characters which most easily affect the senses to those fundamental and universal characters which appeal to the intellect—a process of universalization which, demanding fundamental likeness as the condition of its possibility, implies a universe of one kind throughout whose units, everywhere system-contributing and system-determined, exist only as they are constitutively interdependent.

Reasserting, therefore, the supremacy of the total mind process over the deliverances of the senses, as well as over every imperfect application of the intellect to those deliverances, the relational view demands that our knowledge of nature, instead of being made up of unrelated or imperfectly related views, shall have its foundation in an outlook over the whole field. Holding that the warrant for any view of nature must always be the reasonableness of that view—its consistency with all other attainable truths, with all other propositions believed to be true—it casts the light of the relational method over the path hitherto traversed by the mind. It indicates the way yet to be followed; it points also the goal to be reached. Its task is that of completing the monistic account of nature, and of doing this by revealing that cosmic unity which the accumulated facts of science, when relationally interpreted, already disclose.

The aim of the relational philosophy, so far as concrete nature problems are concerned, is to relate motion to the forms as well as to the substance of the cosmos; to correlate gravitation with light, electro-magnetism, heat; to connect chemical with electro-magnetic action; to unify the self-maintaining organism with the self-maintaining universe; to revise the theory of natural selection with such an account of the internal factors of organic development as shall separate the process by which intelligent adaptations are accumulated from the process by which they are originated; to universalize so-called "intelligence" by showing it to be primarily neither a conscious nor even an organic process, but a process rooted in the very nature of power; and finally, without danger of "pantheistic absorption" or injury to moral interests, to derive all organic and inorganic characters — characters of form, characters of motion, characters of mind—from their fountain and source, the substance system, the Creative Universe.

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